

Should I consider taking part in a clinical trial with experimental stem cells?

If you would like to consider this carefully, the ICCP has put together a booklet in this regard: *Experimental treatment for SCI: what you should know if you are considering participation in a clinical trial. ICCP 2007, Prepared for publication by ICORD Vancouver Canada. (www.icord.org)*. Also consider the fact that if you have gone for experimental therapy this may exclude you from participating in future recognised trials.

Conclusion

There is evidence stem cells will impact the future treatment of spinal cord injury but further research is needed to translate this research into actual treatment. Spinal Cord Injury is not a single simple injury but a series of simultaneous and interacting processes and that multiple actions will be required to find a cure, one possible facet to this being stem cell therapy. Ethical research is to be encouraged in the field as there is no evidence that current ³ V W H P therapies being given to people living with spinal cord injuries are beneficial.

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the answer? Get as strong and independent as possible, use the function you still have to live and enjoy life, and prevent complications that would prevent a cure working for you if and when the cure comes. So avoid bladder infections, pressure sores and stiff joints and muscles, and keep your weight under control and your heart and lungs healthy. Live life to the fullest, keep fit, keep healthy.

If you have any questions feel free to email me Melanie Skeen on melanie@jamrehab.co.za


Other websites with useful information include:

<http://www.shepherd.org/files/wysiwyg/file/Of%20Spinal%20Cord%20Injury.pdf>

<http://www.iscos.org.uk/statement-on-stem-cell-therapy>

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Stem Cells for Spinal Cord Injuries



Spinal cord injury is a devastating injury resulting in paralysis, loss of feeling, bladder and bowel control, changes to sexual function, balance, blood pressure and temperature control and this leads to decreased independence or ability to participate in the activities of normal life.

Initial damage to the spinal cord is caused by the injury and secondary damage is caused by decreased blood flow, oxygen starvation and the formation of toxic substances and the inflammatory response in the spinal cord. This damage occurs to the nerves in the spinal cord and scar tissue known as the glial scar develops. This forms a barrier to self-repair of the spinal cord. Repair requires more than just the growth of new nerves, the scar needs to be breached and the material in which the nerves are to grow needs to be favourable.

Stem cells for spinal cord injuries:

Recent advances in stem cell technologies have opened up the possibility of new treatments for spinal cord disease and injury. For ages it was believed that nerves in the spinal cord could not regrow: this has been proven false. The barriers and inhibitory factors need to be overcome to promote spinal cord recovery, some biological therapies are and have been studied to do this. If the inhibitory factors for nerve growth are limited then the possibility of using stem cells to heal spinal injuries becomes viable.

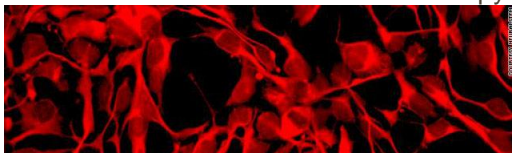
Recognized treatment for Spinal cord injuries:

Treatment includes stabilising of the injury, the breathing, heart and circulatory systems; then ensuring adequate blood flow to the spinal cord. Surgery is performed if indicated. Surgery does not necessarily improve the condition but allows for shorter rehabilitation and hospitalisation time. Besides operations, medicines that are **believed** to limit the secondary injury, are sometimes given.

As yet there is no known cure for spinal cord injuries.

The following needs to be attended to: skin, lungs, breathing, blood pressure, heart rate, temperature control, spasticity, pain, digestive tract slowing, loss of bladder control, constipation, blood clots or other circulatory problems, infections, bladder or kidney infections, contractures (stiff joints and muscles) and muscle wasting also need to be monitored. Long term treatment may be needed for pain, fertility, autonomic dysreflexia (uncontrolled sudden high blood pressure), myositis (bone forming in muscle causing stiff joints), stiff joints and muscles, depression, infections, osteoporosis and fractures.

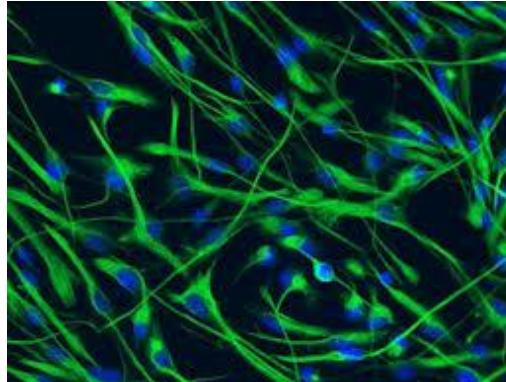
Rehabilitation is a crucial part of the treatment of spinal cord injuries and its aim is to use left-over function and teach new skills and techniques to become as independent and as functional as possible. Functional Electrical Stimulation of muscles and spinal cord, gravity assisted walking or locomotor training and now also robotics can be used in therapy.



Most complete injuries recover at least 1 level and incomplete injuries even more within the first year to 18 months after injury.

What are stem cells?

A stem cell is any cell that can divide and form more stem cells that have the potential to develop into mature cells. There are various types of stem cells including embryonic (from a foetus), neural (nerve) and non-neural such as hematopoietic (bone marrow or blood). Stem cells have been used in many years in the treatment of blood cancers.



Current research

Stem cells have proven useful in the treatment of rats and mice with spinal cord injury. Studies have shown improvement in movement and function. Unfortunately the progress from animal studies to actual treatment in humans is still a way off.

Research in humans as in rodents may be due to the differences between rat and human muscle and nervous systems and the way the injury given to the rodents in laboratories is different from the average human spinal cord injury.

Some studies in humans have been started recently, and some trials have shown safety for the use of stem cells in the spinal cord i.e. no negative side effects, but so far no neurological recovery has occurred. (I.e. no new muscle strength, feeling or function) There is a risk of a worsening in the neurological level especially in a quadriplegic, where the result could be loss of finger, hand or arm movements (C5 - C1) or even the ability to breathe (C3 - C5 lesion).

One problem in proving the effectiveness of treatment for spinal cord injuries (SCI) is the fact that after SCI there is a natural recovery in a percentage of spinal injuries- so sometimes reported recoveries are not because of the new therapy but would have occurred anyway.

Despite the risks these experimental stem cell therapies have been advertised now as a cure without proof that they work. Presently there is no scientific evidence and no recognized institutions doing stem cell therapy as a cure for SCI. No form of stem cell therapy is recommended by ISCOS (International spinal cord society) or the ICCP (International campaign for cure for spinal cord paralysis) for the treatment of SCI.

Are there possible risks to stem cell therapy? Yes: No improvement, deterioration in your injury i.e. loss of muscle power or feeling or function, tumour growth, infection and increased pain or spasm.

